

**Amendments to the Claims**

**Listing of Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Withdrawn) An isolated polypeptide selected from the group consisting of:
  - a) a polypeptide comprising the amino acid sequence of SEQ ID NO: 1,
  - b) a polypeptide comprising a naturally occurring amino acid sequence at least 90% identical to the amino acid sequence of SEQ ID NO: 1,
  - c) a biologically active fragment of a polypeptide having the amino acid sequence of SEQ ID NO: 1, and
  - d) an immunogenic fragment of a polypeptide having the amino acid sequence of SEQ ID NO: 1.
- 2.-10. (Canceled)
11. (Currently Amended) An isolated antibody which specifically binds to an isolated polypeptide selected from the group consisting of:
  - a) a polypeptide ~~with~~ **consisting essentially of** the amino acid sequence of SEQ ID NO:1,
  - b) a polypeptide comprising a naturally occurring amino acid sequence at least **90% 95%** identical to the amino acid sequence of SEQ ID NO: 1, said polypeptide having protein phosphatase activity,
  - c) an enzymatically active fragment of a polypeptide having the amino acid sequence of SEQ ID NO: 1, and
  - d) an immunogenic fragment of a polypeptide having the amino acid sequence of SEQ ID NO: 1.
12. (Withdrawn) An isolated polynucleotide selected from the group consisting of:
  - a) a polynucleotide comprising the polynucleotide sequence of SEQ ID NO: 2,

- b) a polynucleotide comprising a naturally occurring polynucleotide sequence at least 90% identical to the polynucleotide sequence of SEQ ID NO: 2,
- c) a polynucleotide complementary to a polynucleotide of a),
- d) a polynucleotide complementary to a polynucleotide of b), and
- e) an RNA equiv

13.-28. (Canceled)

29. (Withdrawn) A method of assessing toxicity of a test compound, the method comprising:

- a) treating a biological sample containing nucleic acids with the test compound,
- b) hybridizing the nucleic acids of the treated biological sample with a probe comprising at least 20 contiguous nucleotides of a polynucleotide of claim 12 under conditions whereby a specific hybridization complex is formed between said probe and a target polynucleotide in the biological sample, said target polynucleotide comprising a polynucleotide sequence of a polynucleotide of claim 12 or fragment thereof,
- c) quantifying the amount of hybridization complex, and
- d) comparing the amount of hybridization complex in the treated biological sample with the amount of hybridization complex in an untreated biological sample, wherein a difference in the amount of hybridization complex in the treated biological sample is indicative of toxicity of the test compound.

30. (Withdrawn) A diagnostic test for a condition or disease associated with the expression of PROPHO in a biological sample, the method comprising:

- a) combining the biological sample with an antibody of claim 11, under conditions suitable for the antibody to bind the polypeptide and form an antibody:polypeptide complex, and
- b) detecting the complex, wherein the presence of the complex correlates with the presence of the polypeptide in the biological sample.

31. (Original) The antibody of claim 11, wherein the antibody is:
- a) a chimeric antibody,
  - b) a single chain antibody,
  - c) a Fab fragment,
  - d) a F(ab')<sub>2</sub> fragment, or
  - e) a humanized antibody.
32. (Original) A composition comprising an antibody of claim 11 and an acceptable excipient.
33. (Withdrawn) A method of diagnosing a condition or disease associated with the expression of PROPHO in a subject, comprising administering to said subject an effective amount of the composition of claim 32.
34. (Original) A composition of claim 32, wherein the antibody is labeled.
35. (Withdrawn) A method of diagnosing a condition or disease associated with the expression of PROPHO in a subject, comprising administering to said subject an effective amount of the composition of claim 34.
36. (Original) A method of preparing a polyclonal antibody with the specificity of the antibody of claim 11, the method comprising:
- a) immunizing an animal with a polypeptide consisting of the amino acid sequence of SEQ ID NO: 1, or an immunogenic fragment thereof, under conditions to elicit an antibody response,
  - b) isolating antibodies from said animal, and
  - c) screening the isolated antibodies with the polypeptide, thereby identifying a polyclonal antibody which binds specifically to a polypeptide comprising the amino acid sequence of SEQ ID NO: 1.
37. (Original) A polyclonal antibody produced by a method of claim 36.

38. (Original) A composition comprising the polyclonal antibody of claim 37 and a suitable carrier.

39. (Previously presented) A method of making a monoclonal antibody with the specificity of the antibody of claim 11, the method comprising:

- a) immunizing an animal with a polypeptide consisting of the amino acid sequence of SEQ ID NO: 1, or an immunogenic fragment thereof, under conditions to elicit an antibody response,
- b) isolating antibody producing cells from the animal,
- c) fusing the antibody producing cells with immortalized cells to form monoclonal antibody-producing hybridoma cells,
- d) culturing the hybridoma cells, and
- e) isolating from the culture a monoclonal antibody which binds specifically to a polypeptide comprising the amino acid sequence of SEQ ID NO: 1.

40. (Original) A monoclonal antibody produced by a method of claim 39.

41. (Original) A composition comprising the monoclonal antibody of claim 40 and a suitable carrier.

42. (Original) The antibody of claim 11, wherein the antibody is produced by screening a Fab expression library.

43. (Original) The antibody of claim 11, wherein the antibody is produced by screening a recombinant immunoglobulin library.

44. (Withdrawn) A method of detecting a polypeptide comprising the amino acid sequence of SEQ ID NO: 1 in a sample, the method comprising:

- a) incubating the antibody of claim 11 with a sample under conditions to allow specific binding of the antibody and the polypeptide, and
- b) detecting specific binding, wherein specific binding indicates the presence of a polypeptide comprising the amino acid sequence of SEQ ID NO: 1 in the sample.

45. (Withdrawn) A method of purifying a polypeptide comprising the amino acid sequence of SEQ ID NO: 1 from a sample, the method comprising:

- a) incubating the antibody of claim 11 with a sample under conditions to allow specific binding of the antibody and the polypeptide, and
- b) separating the antibody from the sample and obtaining the purified polypeptide comprising the amino acid sequence of SEQ ID NO: 1.

46.-57. (Canceled).

58. (New) An isolated antibody which specifically binds to a polypeptide, wherein the polypeptide comprises an amino acid sequence having at least 95% sequence identity to the amino acid sequence of SEQ ID NO: 1 and possesses phosphatase activity.

59. (New) The isolated antibody of claim 58, wherein the antibody specifically binds to a polypeptide consisting essentially of SEQ ID NO: 1.

60. (New ) The isolated antibody of claim 58, wherein the antibody specifically binds to a polypeptide having one or more conservative amino acid substitution.

61. (New) An isolated antibody which specifically binds to a polypeptide variant of SEQ ID NO: 1, wherein the polypeptide variant has of one or more conservative amino acid substitution and possesses phosphatase activity.

62. (New) The antibody of claim 58, wherein the antibody is:

- a) a chimeric antibody,
- b) a single chain antibody,
- c) a Fab fragment,
- d) a F(ab')<sub>2</sub> fragment, or
- e) a humanized antibody.

63. (New) A composition comprising an antibody of claim 58 and an acceptable excipient.

64. (New) A composition of claim 63, wherein the antibody is labeled.
65. (New) A method of preparing a polyclonal antibody with the specificity of the antibody of claim 58, the method comprising:
- a) immunizing an animal with a polypeptide consisting of the amino acid sequence of SEQ ID NO: 1, or an immunogenic fragment thereof, under conditions to elicit an antibody response,
  - b) isolating antibodies from said animal, and
  - c) screening the isolated antibodies with the polypeptide, thereby identifying a polyclonal antibody which binds specifically to a polypeptide comprising the amino acid sequence of SEQ ID NO: 1.
66. (New) A polyclonal antibody produced by a method of claim 65.
67. (New) A composition comprising the polyclonal antibody of claim 66 and a suitable carrier.
68. (New) A method of making a monoclonal antibody with the specificity of the antibody of claim 58, the method comprising:
- a) immunizing an animal with a polypeptide consisting of the amino acid sequence of SEQ ID NO: 1, or an immunogenic fragment thereof, under conditions to elicit an antibody response,
  - b) isolating antibody producing cells from the animal,
  - c) fusing the antibody producing cells with immortalized cells to form monoclonal antibody-producing hybridoma cells,
  - d) culturing the hybridoma cells, and
  - e) isolating from the culture a monoclonal antibody which binds specifically to a polypeptide comprising the amino acid sequence of SEQ ID NO: 1.